133 everywhere only sluggish waters run in the relatively recent valleys. To all appearances a general damming up of waters has taken place due to recent block movements which have caused an enormous growth of swamps in the valleys in Urundi, especially in the north and northeast, and in the entire interlacustrine region. Its main cause is insufficient drainage in the network of streams of the Kagera River on the one hand and in that of the Malagarasi on the other, since their level of erosion has apparently been raised by more recent block movements in both areas.

The two big rivers mentioned above divide Urundi into two hydrographic systems: the larger northern system drains into the Kagera, Lake Victoria, the Nile, and, therefore, into the Mediterranean; the smaller southern one into the Malagarasi, Lake Tanganyika, the Congo River, and, therefore, into the Atlantic Ocean.

132 Since Urundi is between 2 1/2 and 4 1/2 degrees south latitude, it has, like Ruanda, an equatorial climate with two rainy seasons and two dry seasons. The rains occur soon after the sun has reached its zenith in April and October. The amount of precipitation, approximately 1,250 millimeters in the north and less than 1,000 millimeters in the south, is not great for a tropical region, yet it is still plentiful and evenly distributed. The average annual temperature fluctuates about 20 degrees Centigrade. It is higher in the east, and in the mountains of the west the thermometer almost approaches zero in July. Day after day a vigorous east wind blows across the highlands. In the mornings there are often dense mists in the valleys.

• 137 The warm temperature, the amount of precipitation, and the distribution of rain would lead one to expect extended forest growth in Urundi, but this is not the case. Urundi is quite predominantly grassland (Plate 1a), pasture land at high altitude, like Ruanda. This is because the natives cut down the forest [311] to make fields and pastures. Toward the east in the direction of Uha where the country is lower, the grassland gradually turns into a tree and tussock grass steppe (Plate 3b). The grass grows higher and wilder in Urundi than in Ruanda since the grassy plains

•137 are not burned down so regularly, and Urundi is not as completely treeless as Ruanda because next to each kraal a few fig trees are maintained for the use of their bark. Also, [5] the larger rivers, such as the Ruvuvu or the Malagarasi, are bordered for some stretches with a rather dense forest on the banks (Plate 5). The great majority of the valleys, however, is swampy and filled with dense papyrus thickets which can be penetrated only in a few places (Plate 2a). While in our part of the world valleys are the natural arteries of traffic and the most suitable places for settlement, they can never serve this purpose in most of Urundi. The swamp covered valleys and [361] their often very steep slopes force the population and their roads and settlements to the upland plateaus and upper slopes. For this reason all farmsteads are on mountain ridges and the higher slopes of the valleys. In the valleys the only fields are of crops [241] that, like sweet potatoes, need considerable moisture. This character of the valleys will make it extremely difficult to open up the country by means of roads or even railroads. The papyrus swamps are, next to the grassy hills across which one can see for miles, the most characteristic feature in the landscape of Urundi, as well as of Uha and Ruanda, that is, of most of the interlacustrine region.

Richard Kandt, the poet among the travelers to East Africa, devotes the following impressionistic description to them.

"From the time we entered the region of Urundi and also during the last days in Uha, papyrus swamps formed the characteristic feature of the landscape. Often streams hardly more than two meters wide lie in a valley of papyrus several hundred meters wide. It fills not only the main valleys but extends also into all tributary valleys and even climbs up the ravines and gorges so that, seen from a height, the country looks like a gigantic network of green ribbons in whose meshes the mountains lie like islands. I have seen many a strange and beautiful landscape in Africa. I have experienced the indescribable melancholy hovering over burned, trembling-hot steppes when the rays of the sinking sun, in a bloody red, break through the glittering haze. In the territory of the Congo State I have tasted

●137 to the full the splendors and terrors of the jungle. I have taken delight in the serene gracefulness of the central African lakes, and I have admired the grandiose miracle world of the volcanos. I know the harsh grandeur of the rivers which flow silently through the shadow of the forest galleries and the tragic mood inspired by the lava wilderness deserted by all good spirits. Yet I must say that scarcely any of these scenic moods has impressed itself on my mind more deeply than the picture of such a papyrus landscape. It is constantly changing, not only with the season but almost with every hour of day, depending on the angle of the rays of the sun; it is different in clear and in overcast weather, in the morning and in the evening. For hours I used to gaze down on it from the height of a mountain and never tired of observing the violet shadows of the wandering clouds moving across the green plains or the wind playing with them in such a way that only a mild disturbance would arise among them, as in a tightly crowded herd, but then it would swell up to a storm and plow long deep furrows between them which would repeatedly close up and open and close up again." (No. 22, page 246.)

Only on the highest mountain ridges of the west (Plate 4a) are there any virgin forests with tall trees in Urundi, but even here there are only relatively small remnants, as in Ruanda and in a few corners of Lake Victoria. Everywhere they have been pushed back and destroyed by the expanding population. Most probably the entire interlacustrine region was still covered by virgin forest only a few centuries ago, since the altitude as well as the temperature and rainfall in the interlacustrine region favor the growth of forests, but the rapid increase in population of the agricultural Bantu demanded more space, and the forest had to give way. The devastation of forests became even greater when the cattle-raising Batussi [Tussi] invaded the interlacustrine region and claimed larger and larger areas as pasture for their herds of cattle. Replacing the burnt forest, bamboo (Arundinaria alpina) has grown in many places in the upland valleys [6]; it

137 better resists the periodic grass fires and adds a peculiar feature to the scenery of the mountains (Plate 4b). The growth of grass and trees in the hot, dry plain of the Ruzizi lowland (Plate 3a) is, however, very much like a steppe.

136 As a result of the expansion of the population and the destruction of the forest, free wildlife also has been considerably reduced. In the grassland there remain only very few antelope (Jimela, tuft antelope, gazelles), and of large birds only crowned cranes which because of their great numbers might be called the heraldic animal of Urundi and Ruanda, further bustards, herons, ibises, francolins, Nile geese, etc. In the forests on the riverbanks one still finds bushbucks (Tragelaphus), swamp antelopes, and duikers. In the water itself there are numerous hippopotamuses, crocodiles, and otters. In the remaining parts of forest on the highland periphery and in the tree steppe of the Ruzizi lowland, there still live quite a number of elephants, buffalo, baboons, etc. Everywhere leopards are quite frequent. Especially interesting is the mixture of East African and West African forms in this area which in terms of plant and animal geography is a border region. Just as numerous [137] plants, flora of the West African forest, have penetrated into this region and in part even as far as Lake Victoria, so also have many small and large representatives of West African fauna; I shall mention only the gray parrot, the giant touraco, the hornbill, and, of the mammals, the red buffalo, the chimpanzee, and the gorilla. Because of this mixture of East and West African forms, the plant and animal collections of this bio-geographical border zone which extends through western Urundi and western Ruanda are very interesting.

2. The Population

133 Even more interesting than the mixture of flora and fauna is the population mixture, both in Urundi and in Ruanda. There are three anthropologically and culturally distinct elements which are quite sharply separated but exist side by side or one above the

233 troughs of clay are constructed near the water holds into which
[312] the drinking water is scooped. As in our Alps, the hill slopes bear the imprint of the hooves of the cattle in the form of innumerable little steps and paths since the grazing cattle will usually move along the slope in a horizontal direction which is more comfortable for grazing.

In the months after the rains the cattle can gorge themselves on green grass and they then look quite attractive, but during the dry months when all the grass is parched to a gray-brown color, the cattle become so lean that one can count all their ribs. In Urundi during the months of September and October I have seen, almost without exception, cattle which were very emaciated. Only the herds of the chiefs preserve their healthy appearance in the dry period since the best grazing land is reserved for them. The general impression is that both
[137] in Urundi and Ruanda, which are both almost exclusively grasslands, good nourishing pastures are not very extensive. It is possible to wander for days over chains of hills and plains in the sterile, thinly populated quartzite areas of the east where the growth of grass is so poor that it is not worthwhile for the natives to burn it. Since the hill ridges and the valleys in the
[311] populated areas of central and western Urundi are covered with homesteads and fields, insofar as the valleys are not filled with papyrus swamps, in general only the hill slopes for pastures. However, since every year the dry expanse of grass on them is burned off in order to obtain a new growth of green grass as soon as possible and to destroy the vermin noxious to cattle, the quality, the food value, of the grass [43] cannot improve. Also, if the herds multiply greatly, as in the northwestern areas of Urundi and in most of Ruanda, the pastures are soon over-
[246] stocked. The Batussi and Bahutu do not grow any fodder with a high food value which could compensate for the lack of good grazing land. As a result most cattle suffer from malnutrition, and if then a contagious disease is brought into the country or if it is caused in the area itself through infectious vermin, etc., the animals with low resistance succumb to it in great numbers. The available grazing land is then sufficient for the

Plate 2

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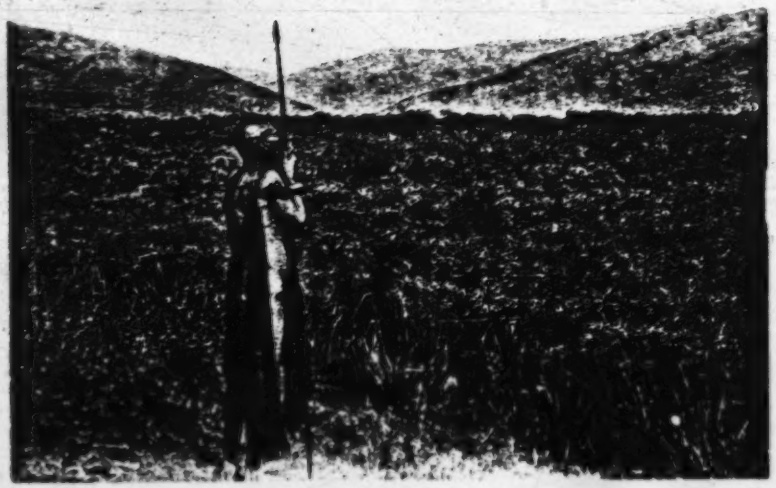

Valley Filled with Papyrus Swamp in Northwest Urundi
(Photo. by Hans Meyer, 1911)

133

Quartzite Ridge East of Mujaga, East Urundi
(Photo. by Hans Meyer, 1911)

2: Meyer--237 K-5 (1911) 1916 FO42 Rundi FO42

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[482]

Grass Steppe in the Lower Ruzizi Valley, District of Bulinga
(Photo. by Hans Meyer, 1911)

Tree and Grass Steppe on the Kajongo River, Central Urundi
(Photo. by Hans Meyer, 1911)

Plate 4

●137

Primeval Forest in the Peripheral Mountains of Northwest Urundi
(Photo. by R. Grauer)

Bamboo Forest in the Peripheral Mountains East of Usumbura
(Photo. by Hans Meyer, 1911)

2: Meyer--253 K-5 (1911) 1916 FO42 Rundi FO42

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Barundi Village near Kilima, Northwest Urundi
(Photo. by Hans Meyer, 1911)

Barundi Homestead East of the Muwarasi River, West Urundi
(Photo. by Hans Meyer, 1911)

2: Meyer--254 K-5 (1911) 1916 FO42 Rundi FO42

Plate 20

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Village with Euphorbia Fence in the Hyphaene Steppe
of the Lower Ruzizi River
(Photo. by Hans Meyer, 1911)

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Euphorbia Hedges to Protect the Fields, near Mugera
(Photo. by Hans Meyer, 1911)

2: Meyer--255 K-5 (1911) 1916 FO42 Rundi FO42

Plate 21

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Barundi Carrying Bamboo Poles for House Construction, near Gitega, Central Urundi
(Photo. by Captain von Langenn-Steinkeller)

137

Homestead with Fig Trees for Barkcloth, East of Mujaga, East Urundi
(Photo. by Hans Meyer, 1911)

Plate 23

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Cattle Near Mugera, Central Urundi
(Photo. by Hans Meyer, 1911)

Cattle with Bitterns in the Ruzizi Valley, Northwest Urundi
(Photo. by Captain von Langenn-Steinkeller)

2: Meyer--263 K-5 (1911) 1916 FO42 Rundi FO42

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Sacred Grove (Imana) in Central Urundi
(Photo. by J. M. van der Burgt)

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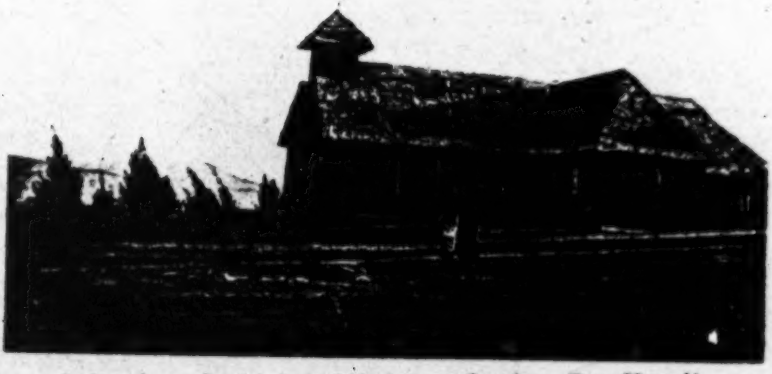

Church at the Mujaga Missionary Station, East Urundi
(Photo. by Hans Meyer, 1911)

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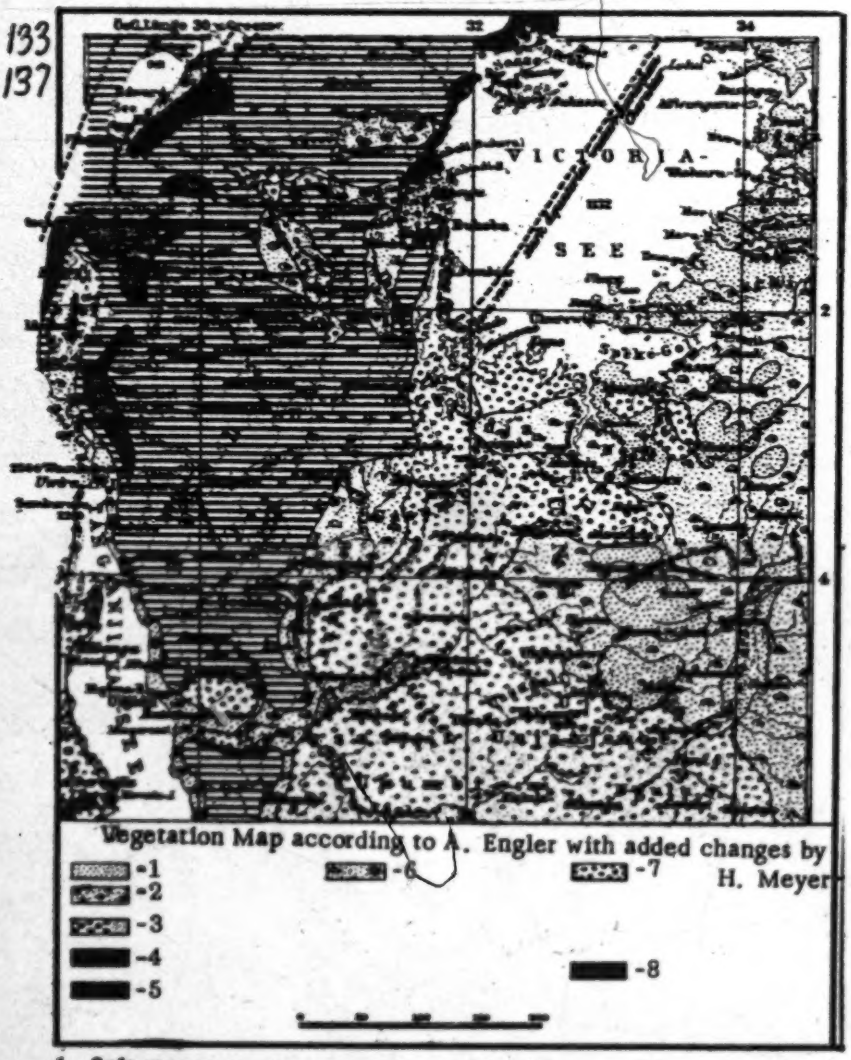

1. Salt steppe.
2. Alluvial plain with West African forms.
3. Alluvial plain, region with little rain, frequently parklike.
4. Tropical rain forest of plains and mountains.
5. Forest and high altitudes, or forest where fog is common.
6. Dry brushland, also mountain brush, partly non-deciduous forms, in some places with trees, and frequently turning into bush and bush and tree steppe.

[End map, lower left, (continued) in color]

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●137

7. Dry forest (steppe forest, Miombo forest) or tree steppe with sparse grass; a few types of trees predominate, the individual types often in clusters.

8. Grazing plateau and mountain steppe; besides mountain bushes, rock and loose rock vegetation of the highest regions.

648 The kings of Ruanda also headed numerous expeditions into the Congo with no definite results other than pillage.

133 As a whole, Ruanda is a high, rolling plateau. It was deforested [137] to get rid of wild beasts and to supply pastures and fields for cultivation.

The northwest is a broken, picturesque, wooded region. There stands the chain of volcanoes, practically all of which are extinct today. /24/

The highest peaks are the Karisimbi (1), which is 4, 506 meters high; the Mikeno (2), or Mukuru mubi (3), which is 4, 380 meters high; the Muhabura (4), which is 4, 127 meters high; the Sabyinyo (5), which

[103 301]

1. Karisimbi, from the word amassimbi, a kind of white shell which the Batutsi of Urundi and Ruanda wear at the neck as an ornament. Because of its color it served to designate the snow that covers the summits, and by extension the highest mountain.

[103]

2. Mikeno, from the verb gukena, "to be bare."

[103]

3. Mukuru mubi, "a peak of difficult access."

[103 487]

4. Muhabura, from the verb guhabura, "to set on the right path," because this mountain serves as a landmark for travelers.

[103]

5. Sabyinyo, "big-toothed father," owing to its volcanic ridges.

134 cultivation of the famous plante médicée /Tr.: "Medici plant"/
24/ (tobacco), the sale of which provides a living for a number of families. /26/

The vast Rwrere plain covers nearly half of the Bugoyi province.
133 Not a spring or brook is to be found there. The rain water immediately
312 drains beneath the lava, which is covered by a mere 50 or 60 centimeters of arable soil. The inhabitants are compelled to cover distances varying between 10 and 20 kilometers, round trip to draw water from the brooks of the Sebeya or the Mutura. During the rainy season, they carefully save the water that collects in the crags of rocks or in small moats dug by each person around his dwelling. The owners of banana groves use the water held by the thicker husks of the banana trees. These are split lengthwise with a knife, and produce water lightly mixed with potash. The natives get used to drinking this liquid without any repugnance.

The Bagoyi who live in the mountainous area are better off than the plains people as far as water is concerned.

The northern area, called Bigogo, consists entirely of pastures.
133 It is inhabited by the herding Batutsi, who own numerous herds of cattle, the wealth of the country.

These same lands of volcanic origin, gave birth to a beautiful
● [137] forest where bamboo grows along with some rare species of trees. It spreads east of Kivu in a north-south direction.

[311] The natives, ever in search of fertile fields and charcoal, have made terrible inroads into it. This is why large gaps are to be found in it.

The central and eastern provinces, the Nduga, Bwana-Mkali, Gissaka, Buganza, etc., are made up of long rolling hills, nearly
[311] always separated by small valleys which are often transformed into marshes and which are very useful for summer planting.

The Buliza, Bussigi, and Luhanga are long plateaus where numerous herds of goats, sheep, and cows graze. These areas lie at an altitude of about 2, 200 meters. /27/

Ruanda also has lakes, the most important of which is Kivu, which is 120 kilometers long and from 40 to 50 kilometers wide.

5: Pages--278 M-5 (ca. 1925) 1933 FO42 Rundi FO42

Acacia Spirocarpa.

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Native encampment outdoors at the foot of a large ficus.

5: Pages--292 M-5 (ca. 1925) 1933 FO42 Rundi FO42

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Blacksmiths at work outdoors. The iron ore is piled up over the hearth. The founders stir up the fire with primitive bellows.

326
516

Blacksmiths around their blast furnace.

9:Maquet E-5 (1949-1951) 1961 FO42 Rundi FO42

PLATE I

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The Virunga volcanoes

[Facing P. 22]

9:Maquet E-5 (1949-1951) 1961 FO42 Rundi FO42

of their different nature which entitled them to rule and as a guarantee against social mobility: because a Hutu was usually not endowed with the Tutsi physical characteristics he could not easily pass the line.

Two other important elements related to the political power system of Ruanda were its extent and its orographic configuration. The country was not very large, about 100 miles from north to south and 140 from west to east. But its relief was that of a maze of hills, many of them very steep, separated by deep valleys. Moreover, it was traversed, from north to south, by a chain of mountains which separate the Congo and Nile basins and is covered with very dense forests inhabited by elephants, leopards, and buffalo.

A centralized government requires good communications. The king must remain, as much as possible, in constant contact with all the regions of his country; tribute must reach the capital regularly, armies must arrive rapidly in any place threatened by an external enemy; local authorities must not be left isolated lest they become too independent. The small extent of Ruanda was indeed an asset from this point of view but this was largely neutralized by the relief which made communications extremely difficult. Notwithstanding these unfavourable physical factors, the mwami had been able to establish and maintain his political network connecting all the subordinate authorities of Ruanda to himself.

These five elements are among those which more significantly affected the domination system of the Tutsi. They are the only ones. Three of them refer to the social power of the Tutsi caste (type of material culture, Tutsi-Hutu ratio, physical appearance), while two others (economy with a small surplus, area, and relief) were operative rather in the sphere of political power. Only two of these background facts (demographic ratio and physical type) were favourable to the domination pattern whereas one (absence of a different material equipment apart from cattle) was neutral and two (lack of a great surplus, geographic configuration) were obstacles.

2. THE SOCIOLOGICAL PROBLEM OF DOMINATION

Within the limits set by these conditions external to the social system, Tutsi had to adapt their organization in order to keep the dominant position for their caste and its rulers. Their problem